CV of **Zahid Baig Mirza:** M. Sc. (Zoology).
Address & contacts: House No 229-B, St. 4, F-10/3, Islamabad.
Phone 051-2105692. 0300 9762801 Email: zbmirza1936@gmail.com
President Snow Leopard Foundation; Member of Islamabad Wildlife Management Board and Chairman Scientific Committee.

CURRENT ACADEMIC OCCUPATIONS: Visiting Faculty: 1. Quaid-e-Azam University Islamabad to teach: a). Ph. D. and M. Phil combined class, the subjects of Mammalogy, Conservation Biology, b). M Sc Class the subjects of Zoogeography & paleontology during the spring semester and also in autumn semester.

2. Visiting Faculty: Kinnaird College for Women to teach 'Biodiversity' during the spring semester, over the last 21 years.

RESEARCH SUPERVISION: 2 – 3 M. Phil field research scholars and 2 – 3 M.Sc. research scholars of Kinnaird College, each year, over the last 21 years.

PRESENT PROFESSIONAL OCCUPATION: Consultant, Biodiversity baseline studies and environment impact assessment of developments on the ecology & species.

DECORATIONS

- Recipient of WWF International Conservation Merit Award in 1982 from Prince Philip, the Duke of Edinburgh, President of WWF International in recognition to my contribution in wildlife conservation education.
- Recipient of President of Pakistan Award for Conservation Merit in 1999 in recognition to my efforts in creating environmental awareness.
- Recipient of Lifetime Achievement Award, From Pakistan Society for Conservation of Wildlife.
- Recipient of Award for my best book "Illustrated Handbook of Biodiversity of Pakistan".
- Life Time Achievement Award 2016 from Zoological Society of Pakistan.
- There is an annual Z. B. Mirza Biodiversity Gold Medal in the Zoological Society of Pakistan.

EXPERIENCE AS FIELD RESEARCH SUPERVISOR: I. Ph. D. Scholars

1. One from Utah State University. His thesis was on Goral in Margallah hills;
2. Quaid-e-Azam University. His work was on communities impact on natural resources including the birds of Naltar valley.
3. One from Karachi University. His work was on Large Red Flying Squirrels in Ayubia National Park.

II. M. Phil. Scholars: 25.
III. B. Sc.(hons). research scholars around 18.

- **RESEARCH PUBLICATIONS IN INTERNATIONAL JOURNALS: 66. (Listed below)**
- **BOOK PUBLICATIONS: 26. (Listed below)**
- **MANAGEMENT PLANS, ENVIRONMENT IMPACT ASSESSMENTS (EIAS) AND BASELINE STUDIES: 33 (Listed below)**
- **COUNTRY REPORTS: Three(Listed below)**
- **TECHNICAL REPORTS**: 13**(Listed below)**

- **ENVIRONMENT AWARENESS AND EDUCATION MATERIAL:**
  Wall charts, posters, folders and brochures: 28

PROFESSIONAL EXPERIENCE: Since 1957

ADMINISTRATIVE EXPERIENCE: of initiating WWF Pakistan and Pakistan Museum of Natural History, Islamabad.

- **WORK POSITIONS HELD**
- Independent Natural History museum technologist and Taxidermist. 1957-1960.
- Research Officer: Tick hosts of West Pakistan, Pakistan Medical Research Center, University of Maryland's project in West-Pakistan. 1960- 65.
- Curator of Zoology Museum, University of the Punjab, Lahore. 1965-71.
- Museum expert & Curator of Birds, Basrah University, Iraq. 1971-72.
- Custodian of Zoology Museum, Tripoli University, Libya. 1972-75.
- Administrator WWF Pakistan 1975-80.
- Director in charge (Grade 20) Pakistan Museum of Natural History, Islamabad. 1980-83.
- General Manager Saudi-Pak Kalabagh Livestock Company, Islamabad. 1984-88.
- Operated & owned a Quail Farm of 10,000 table birds per month production. 1980-1992
- Pakistan's National Consultant for writing of 'Environment state of Pakistan' (22 Chapters) for South Asia Cooperative Environment Programme 1992- 1993.
- Pakistan's National Consultant "Biodiversity investigation" South Asia Cooperative Environment Programme 1993- 1995
- Pakistan's National Consultant for "Environment Education capacity building" South Asia Cooperative Environment Programme 1995-1996.
- Free lance consultant biodiversity. Baseline studies and EIAs till date.
- Consultant Natural Resources Management (Biodiversity) for the awareness of the Civil and the Armed Forces officers under Pakistan Wetlands Programme 2008-2010.

HONOURARY POSITIONS HELD

- Former member IUCN International Commission for Environment Education 1978-80.
- Life Fellow of Zoological Society Pakistan.
- Former Member International Working Group on Grainivorous birds.
- Former Member International Council for Bird Preservation.
- Former Wildlife Advisor to Punjab Government 1975 to 1979.
- Former Chairman Lahore Zoo Management Committee & Education Committee1975 to 1979.
- Former Administrator World Pheasant Association Pakistan 1975 to 1980.
- Former Member National Council for the Conservation of Wildlife 1975 to 1980.
- Former Director WWFP, Islamabad.
- Former Member Board of Governors WWFP for about 20 years.
- Former Member Scientific Committee for small grants WWFP for 25 years.
- Life Member Adventure Foundation of Pakistan.

POSTGRADUATE TEACHING AND RELATED TECHNICAL EXPERIENCE

- Department of Zoology, University of Punjab, Lahore. 1965-70. (Practical help in the Taxonomy and Ecology of Birds & Mammals in addition to the duties as Curator and the development of Zoology Museum).
- Curator of Birds and Museum Expert Natural History Museum, Basrah University, Iraq. 1970-71.
- Custodian of Zoology museum and Principal investigator of Grainivorous birds research project, Tripoli University, Libya.1971-74. (Guidance of research in Ecology).
- Visiting Faculty, Department of Zoology, University of Punjab, Lahore, 1976. (Wildlife Semester).
- Visiting Faculty, Arid Agriculture University, Rawalpindi, 1997-2000 (Biodiversity & Museology).
- Visiting Faculty, Kinnaird College Lahore. 1998- continued ('Biodiversity', Ecology and 'Mammalogy, Ornithology & Herpetology').
- Visiting Faculty, Quaid – Azam University, Islamabad. 2012 continued (Ph.D.; M. Phil and M. Sc. classes: Mammalogy, Zoogeography, Paleontology)

EXPERIENCE OF THE COUNTRY ZOOS

As Chairman of the Lahore Zoo Maintenance Committee for Three years, I m*ade* SOP for the health of the zoo animals. Introduced coloured animals painted entry tickets to stop pilferage; introduced zoo animals awareness material including a small book on animals of Lahore Zoo. I was one of the members of a committee to plan for Jallo Animal Safari Park, Lahore, in late 1970s.

As chair of the Scientific Committee and member of the Islamabad Wildlife Management Board made SOP for Islamabad zoo animals.

EXPERIENCE AS NATURAL HISTORY MUSEOLOGIST

Taxidermy: Stuffing of Birds, Mammals, Reptiles and fish specimens for display 1957 to 2007. Experience in the preparation of skeletons for research and display from the size of Mouse to the size of Giraffe, Elephant and Whale.

Model making: with wax as in Madame Tussaud's museum London. Specialized in making of replicas of plant leaves, fossils, enlarged invertebrates, etc.

Experience in Models in fibreglass and Gyps.

Preservation of species specimens with appropriate techniques for display as well as research collection.

Preparation of study skins for research.

Display Exhibits: Preparation of display exhibits such as dioramas of habitats and background habitat paintings.

Experience in Miniature art and illustrations of species**.**

Curation: Cataloguing: Computer cataloguing and card cataloguing. Care of specimens.

EXPERIENCE IN MAKING NEW NATURAL HISTORY MUSEUMS

Zoology Museum of Punjab University 1965 to 1971.

Natural Histoy Museum, Basrah University, Iraq. 1971 to 1972.

Zoology Museum Tripoli University 1972 to end 1974.

Pakistan Museum of Natural History Islamabad 1980 to end 1983

Jallo Park Wildlife museum having 10 Dioramas of wildlife which includes preservation of plants fiber glass rock work, land and water background oil paintings 9x 20 ft each.

National Museum of Science & Technology Lahore. Diorama of the Balochistan Juniper habitat with stuffed specimens, rock work with fibre glass, preserved plants an background canvas oil paintings 9x20 ft.

Exhibits on Green house effect and ecosystems balance 288 x 10 x 4 ft diorama with background wall paintings, fibber glass ground work and water habitat.

ENVIRONMENTAL AWARENESS THROUGH SCHOOLS.

Nature Clubs

In 1985 WWF Nature Clubs were started in urban and rural schools of Islamabad. These included illustrated lectures, highlighting the environmental issues, and all that students can do at their individual levels, including growing of plant nurseries and vegetable gardens, publishing of students' articles in the news papers etc. Presidential conservation awards were given to many students and teachers of these Nature clubs.

ENVIRONMENTAL AWARENESS OF THE OFFICERS OF THE ARMED FORCES THROUGH TRAINING WORKSHOPS.

As Trainer in training workshops of Pakistan Wetlands Programme for the officers of Frontier Constabulary, Peshawar, Northern Areas Scouts, Police Training College Sihala; Police Training Schools, Saeedabad; Police Training Schools Shahdadpur; Chenab Rangers, Sialkot; Rangers Head Quarters, Lahore, Satluj Rangers, Bahawalpur; Civil Services Academy, Lahore; Thar Rangers Karachi; Suchal Rangers, Sukkur; FWO officers, Rawalpindi; Senior officials of Balochistan, Quetta; PAF Base Officers at Skaser; Cadet College Batrasi; Cadet College Jhelum; School of Artillery Nowshera; College; School Teachers training Workshop, Kinnaird College, Lahore, held two times. Wildlife officers of K P province and Sindh Province at Langh Lake near Larkana, K.P wildlife officers training at Malkandi and Ayubia; All provinces wildlife officers training Workshop at Ayubia National Park, Wildlife and Forest Rangers and Guards at Margallah Hills National Park, Islamabad and many more workshops.

TRAINING WORKSHOPS OF FORESTS AND WILDLIFE STAFF OF ALL PROVINCES OF PAKISTAN on ecosystems conservation.

BIODIVERSITY & ECOSYSTEMS LECTURE SERIES in universities & institutions in 2011 under PWF programme: Zoology department Punjab University; Pakistan Bear Rescue Center, Islamabad; WAPDA training College Islamabad; Margallah Information Centre; Bara Gali WPA workshop; Arid Agriculture University Rawalpindi; AJK University zoology dept; Adventure Foundation's National Conservation

Meet; tour group Lecture series Batakundi, Kaghan valley; Teachers training Workshop at Agriculture University, Faisalabad; International Workshop UVAS Lahore; Professional Management Development Department; College of Earth & Environmental Sciences, Punjab University; Zoology Dept. QAU.

List of: RESEARCH PUBLICATIONS IN INTERNATIONAL JOURNALS

1. Mirza, Z. B. 1965 four new mammals recorded for West Pakistan. Mammals (France) 29(2).
2. ---- 1965. Distribution of Cape Hare Lepus capensis tibetanus in West Pakistan. Pak. J. Sc. 19(5).
3. ----1965 New record Rousettus I. Leschenaultii in West Pakistan. J. Sc. 19(5).
4. ---- 1965 Addition to the recorded birds of Lahore. Pak.J.Sc. 17(6).
5. ---- 1967. Note on the Ecology and distribution of fruit Bat Rousettus *leschenaultii* in West Pakistan. Pak.J.Sc. 19(6).
6. ---- 1970. West Pakistan Migratory Bird Banding. Pak. J. Zoology l2(1).
7. ---- 1971. The Punjab Urial (*Ovis orientalis punjabiensis*). Outdoorman.
8. ---- 1971. Behaviour of the Punjab Urial (*Ovis orintalis punjabiensis*). Proc of International Ungulate Conference 1971 IUCN publication.
9. ---- 1971. Behviour of Kashmir Markhor (*Capra falconeri cashmireinsis*). Mammalia 35(4).
10. ---- 1971. Note on distribution and status of Western Horned Tragopan in Azad Kashmir. The Pheasant Trust (England) Annual Report 1971.
11. ---- 1972 Study of the Fecundity, Mortality, Numbers, Biomass and Food of Population of House Sparrow in Lahore Pakistan Proc. Of Gen. Meeting of Working Group on Granivours Birds IBP. Pt. Section. Hague Polish Scientific Publishers 141–150 pp.
12. ---- 1973. Availability of Food for Black Buck *Antilope cervicapra* at Lal Sohanra. Wildlife sanctuary Bahawalpur, Pakistan. Biological Conservation (Switzerland) Vol. 5. No. 2. April 1973.
13. ---- 1973. Preliminary study of the breeding food, sexual dimorphism and distribution of Spanish Sparrow *Passer hispanionlensis* Temm. in Libya Proc. Gen. Meeting of the Working Group of the Grainivorous birds IBP, Warsaw. Oxford University Press.
14. ---- 1973. Note on the distribution of some birds in Pakistan. Pak.J.Zool. Vol 5.
15. ---- 1974. Sexual dimorphism in Spanish Sparrow in Tripoli International studies on sparrow, IBP, Warsaw.
16. ---- 1975. Study of distribution, habitat and food of Nilgai, *Boselaphus tregocummelus* in Punjab. Pak.J.Zool 7(2).
17. ---- 1975. Study of distribution, habitat and food of Nilgai, *Boselaphus tregocummelus* in Punjab. Pak.J.Zool 7(2).
18. ---- 1975. Study of distribution, habitat and food of Punjab Urial *Ovis orientails punjabiensis.* Pak.J.Zool. Vol 7.
19. ---- 1975. A census of Chiltan Markhor *Capra hircus chieltaniensis* in Chiltan Range, Quetta. Pak.J.Zool. Vol 7.

20. ---- 1976. Pheasant restoration in Pakistan. The Pheasant Trust and Norfold Wildlife Park Annual report.

21. ---- 1976. Wildlife survey of Margalla Hills. APNS Journal USA.

22. ---- 1978. Ecological studies of House Sparrow *Passer domesticus* and their control in Punjab Proceeding of Vertebrate pest Control Seminar.

23. ---- 1979. Pheasant surveys in Pakistan J. Bombay Nat. Hist. Soc Vol 75. No 2.

24. ---- 1979. Distribution, status, habitat and food of the *Urial Ovis orinetalis punjabiensis* in Punjab. JBNHS. Vol76. No. 3. Pp.423–430.

25. ---- 1979. Status of Pheasants in Pakistan. Pheasants in Asia WPA Proceeding of the first International Symposium in Asia.

26. ---- 1979. Education as an aid to Pheasant Conservation in Pakistan. Pheasant in Asia. Proceeding of the first Pheasants International Symposium in Asia.

27. ---- 1979. Cheer Pheasant release programme in Pakistan. Pheasant in Asia. Proceeding of the first International Symposium in Asia.

28. ---- 1980. Selection of release site for the reintroduction of Cheer Pheasant in Pakistan J. WPA.

29. Mirza, Z. B. and Asghar, M. 1980. Census of Sind Ibex (*Capra hircus blythi*) and Gud(*Ovis orientalis blanfordi*) and some estimate of population of chinkara (*Gazella gazella*) in Kirthar National Park and Sumbak Game Reserve, Sind. Pakistan Jour. of Zoology.12(2): 268-271.

30. ---- 1981. Food of Punjab Urial Proc Forestry Congress. PFI. Peshawar.

31. ---- 1982. New record of Dusky Horned Owl Breeding on Ground. Pak.J.Zool. 15.

32. ---- 1982. New distribution record of Himalayan Palm Civet *Paguma larvata*. Park.J.Zool. 15.

33. ---- 1982. Third record of Great Blue Whale *Balaenoptera muscular* Lin from Pakistan. Pak. J. Zool. 15.

34. ---- 1982. New distribution record for Green Pigeon. Pak. J. Zool. 14(2): 237.

35. ---- 1983. Houbara and Cholistan. ISOB, Peshawar. Oct. 4 – 7. 1983.

36. ---- 1985. A note on Houbara Bustards in Cholistan. Punjab, Bustard Studies 3: 43 – 44.

37. ---- 1986. New record of Dusky Owl (*Bubo coromandus*) nesting on groung. Pak. J. Zool. 17(3): 109 – 110.

38. ---- 1995. Conservation of Wildlife of dry and cold mountainous areas of Pakistan. Proc Regional Workshop on sustainable Agriculture in dry and cold mountainous areas in Pakistan. ICIMOD publication.

39. ---- 2002 Illustrated Report on Animal Biodiversity Assessment at the watershed level: Pilot project of 'Himal', Conservation of Tropical Deciduous Forest and sub-tropical Pine Forest Ecosystems in Murree foot-hills along river Jhelum at Kotli Sattian. (November 2001 to end June 2002) IUCN Islamabad 2002**.**

40. Nawaz, Mohammad Ali, Zahid Baig Mirza and Sarwat Mirza 2003 Poster on "Urial population and state of habitat in Dumbar range of Khirthar National Park, Pakistan" in 3rd International Congress on Wildlife Management, The Wildlife Society, Christchurch, New Zealand.

41. ---- 2005. The first report of the post-cranial skeletal measurements of Woolly Flying Squirrel *Eupetaurus cinerius*, with observations of its behaviour. Pak. J. Zool.
42. Irshad, Sadia and Z. B. Mirza 2011. Ecological and Socioeconomic Linkages of Birds of Ravi Riverine Habitats. Pakistan J. Zoology 43-(1), pp. 113 – 122.
43. S. Y. Shelly, Z. B. Mirza, and S. Bashir 2011. comparative ecological study of aquatic macro-invertebrates of Mangla Dam and Chashma Barrage wetland areas. The Journal of Animal and Plant Sciences, 21(2 Suppl.):, Page: 340-350
    ISSN: 1018-7081
44. ----2011 Understanding the Ecological Linkages of ecosystems to conserve Wildlife. The Journal of Animal and Plant Sciences 21(2 Suppl.)page 415-420. ISSN 1018-7081
45. Tahira Hussain[1], 2*, Zahid Baig Mirza[2] 2015. **Descriptions and seasonal variations of various biotopes and ecotones of Indus river bed at chashma barrage, Pakistan.**Turkish Journal of Agriculture - Food Science and Technology 3(5): 255-260,
46. Mirza, Z. B. 2019. Ethological observations on some birds of Chashma and Jinnah Barrages. Journal of Zoology, Sindh University, Jamshero.

BOOK PUBLICATIONS---- 1968 Mammals of West Pakistan Central Urdu Board

1. ---- 1967. Mammals of West Pakistan Urdu Science Board
2. ---- 1976. Galliforms of Pakistan. WWFP
3. ---- 1976 Falconiforms of Pakistan. WWFP
4. ---- 1976 Anseriforms of Pakistan. WWFP
5. ---- (Co-author with Dr. R.H Jaferi) 1977 Zoogeography of the world. Central Urdu Board.
6. ---- 1977 Mammals of Pakistan. WWFP
7. ---- 1977 Conservation Show and do Kit. WWF Pakistan.(Urdu & English).
8. ---- 1997 Field Guide to Ayubia National Park and investigation techniques WWF
9. ---- 1998 Illustrated Handbook of Animal Biodiversity of Pakistan. Centre for Environmental Research and Conservation, Islamabad. (Recipient of best book award).
10. ---- 2002 A Pocket Guide to Khirthar Khirthar National Park and it adjoining Protected Areas. Premier Kufpak / Sindh Wildlife Department.
11. ---- 2005 Pocket Guide to Birds of Deosai National Park. Himalayan Wildlife Foundation.
12. ---- 2007 A Field Guide to Birds of Pakistan. WWFP/ Bookland Publishers, Lahore. (2nd revised Edition).
13. ------Field guide to some Trees, Shrubs, Herbs. Mammals and Birds of Ayubia National park. WWF, Islamabad
14. ----2008 Snakes of Margallah Hills National Park. (Illustrated). (Revised Edition 2010 with new records). Himalayan Wildlife Foundation, Islamabad.
15. ----2008 (Urdu versions 2010 with new records). Snakes of Margallah Hills National Park. (Illustrated). Himalayan Wildlife Foundation, Islamabad.

16. ---- 2010. Biodiversity of Margallah Hills National Park. Himalayan Wildlife Foundation, Islamabad.
17. ---- 2010. Wildlife of Kaghan Valley for Tour Giudes. CNF-ILED Islamabad. (Urdu).
18. ---- 2010 Training Manual for Forest & Wildlife staff of Margallah Hills National Park. Himalayan *Wildlife Foundation, Islamabad. (Urdu versions).*
19. ---- 2010 Training Manual for Forest & Wildlife staff of Margallah Hills National Park. Himalayan Wildlife Foundation, Islamabad. (English version).
20. ----2010. Snakes of Margallah Hills National Park. (Illustrated). Himalayan Wildlife Foundation, Islamabad. (English).
21. ----Mirza, Z. B. 2011. Ecosystems of Pakistan in 12 Volumes. Published Vol. I (Ecozones of Pakistan).
22. ---- 2012. Volume II (Ecosystems of Permanent Snow and Alpine zone).
23. ---- 2014. Training manual for Nature Clubs in Chitral & Gilgit Baltistan. (Urdu). Snow Leopard Foundation.
24. ---- 2015. Volume III (Ecosystems of Moist Temperate Coniferous Forests zone). Vol. 3 & the remaining volumes are in line for printing one after the other. WWFP- Urdu Science Board**.**
25. ---- 2015. Comic book (Urdu) on Indus Blind Dolphin. Sustainable Tourism Foundation Pakistan.
26. ---- 2017. Comic book on issues of the mountainous ecosystems due to anthropogenic activities.

MANAGEMENT PLANS, ENVIRONMENT IMPACT ASSESSMENTS (EIAS) AND BASELINE STUDIES

Mirza, Z. B. 2002 EIA of Dumbar mountain, Khirthar National Park (including baseline study of Birds and Large Mammals) Hagler Bailly for Sindh Wildlife Department

1. ---- 2002 EIA of Kambu mountain, Khirthar National Park (including baseline study of Birds and Large Mammals) Baseline Studies of Hagler Bailly for Sindh Wildlife Department
2. ---- 2003.Management Plan of Khirthar National Park (including baseline study of Birds and Large Mammals and proposal for Awareness and Education and Ecotourism) Hagler Bailly for Sindh Wildlife Department
3. ---- 2004-2005 Baseline Studies of East Nara Wildlife Sanctuary, Thar desert. (Birds and Large Mammals). Hagler Bailly for Sindh Wildlife Department.
4. ---- 2003 Baseline Studies of Chitral Gol National Park. NWFP Wildlife department.
5. ---- 2004 Study of the the impact on birds of the Mangla Bong Canal Hydel Power Generation through Mr. Mohammad Omar Khalid.
6. ---- 2005 Baseline survey of birds of Machiaria National Park Azad Kashmir. Hagler Bailly for government of Azad Kashmir..
7. -----2005/06 Baseline survey of Margallah Hills National Park Hagler Bailly for CDA.
8. ---- 2005/06 Management Plan of Margallah Hills National Park (Vertebrate fauna; Awareness and Education) Hagler Bailly for CDA.
9. ---- 2006 The impact on birds of the high tension transmission lines over Murree Hills and beyond to AJK, through Mr. Mohammad Omer Khalid.
10. ---- 2007 The impact on birds of the high tension transmission lines over agricultural Areas in Sukkar district.
11. ---- 2007 Development Plan for Marguzar Zoo Hagler Bailly for CDA
12. ---- 2008 Baseline Survey of upper Neelam Valley Himalayan Wildlife Foundation (Principal Consultant).
13. ---- 2006-07- 08. Seasonal Surveys of Hamun-e-Mashkhel and Tahlab river, western Blochistan.(Senior Cosultant Bioecology) Hagler Bailly.

14. ---- 2008 - 09 Seasonal Surveys of birds of the coastline of Gwader, Mekran Hagler Bailly.
15. ---- 2009 - 10 Seasonal Surveys of birds of the Thar Coal Mines Area, Hagler Bailly.
16. ---- 2011. Base line Ecological Study of the birds of the Aynak Copper Project area including Logar and Kabul Districts (50 km around the project site), Afghanistan. Hagler Bailly
17. ---- 2011. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of Gomal Zam command area of irrigation system of South Waziristan. Elan Partners (Pvt) Ltd. Islamabad. For US AID for its specific use.
18. ---- 2011. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of Tochi river command area of irrigation system of North Waziristan. Elan Partners (Pvt) Ltd. Islamabad. For US AID for its specific use.
19. ---- 2012. Monitoring Plan of Zorlu Wind Energy Farm, Dist. Thatta. Elan Partners (Pvt) Ltd. Islamabad.

20. **----** 2012. Impact Assessment on biodiversity(including birds) of The Mahandri Hydal project & its transmission line , Kaghan valley through Elan Partners (Pvt) Ltd. Islamabad.
21. **----** 2012. Impact Assessment on biodiversity(including birds) of the Kund-Tangar hydal project, Kaghan valley, through Elan Partners (Pvt) Ltd. Islamabad.

22. 2012. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of Garam Chashma Power plant and transmission line, Chitral. Elan Partners (Pvt) Ltd. Islamabad.
23. -----2012. Fish ladder design and location study for Warsak dam, Kabul river. Elan Partners (Pvt) Ltd. Islamabad.
24. -----2013. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of Khushal Garh Power plant area. Elan Partners (Pvt) Ltd. Islamabad.
25. -----2014. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of Kot Addu, dist.Muzaffargarh Power plant area. Elan Partners (Pvt) Ltd. Islamabad.
26. -----2015. Base line Ecological Study of the mammals, birds, reptiles & fish and common plants of
27. Mastuj River Hydro Power Project, Chitral. Elan Partners (Pvt) Ltd. Islamabad.
28. Impact assessment of the Tarbela- Islamabad transmission line and islamabad grid station on birds, in particular the migratory species. WAPDA
29. -----2016. Impact assessment of the – Dassu-Islamabad transmission line on birds, in particular the migratory species. KEPCO.
30. ------2017. Impact assessment of a Coal Power Plant at Rahim Yyar Khan Elan Partners (Pvt) Ltd. Islamabad.
31. ------2017 Two year study of the bird collusion with wind turbines of Zorlu Wind Energy farm Jhimpir, Sindh. Elan Partners (Pvt) Ltd
32. -------2018 EIA of Solar Power Hybrid Hybrid Energy Farm of Zorlu Wind Energy farm Jhimpir, Sindh. Elan Partners (Pvt) Ltd.
33. _____2018. Ecological uplifting of Garano pond , Thar Coal mines, preliminary report . IUCN
34. _____ New distribution record and the status of Long-billed vulture *Gyps indicus* in Sindh Province of Pakistan in 2019 – 2020

COUNTRY REPORTS

- Mirza, Z. B. 1993 Environment State of Pakistan**.** (22 Chapters) Government of Pakistan for South Asia Cooperative Environment Programme.

- ---- 1994 Biodiversity Assessment Report Government of Pakistan for South Asia Cooperative Environment Programme.

- ---- 1996 Environment Education Capacity Building in Pakistan Government of Pakistan for South Asia Cooperative Environment Programme.

TECHNICAL REPORTS:

1. Mirza, Z. B. 1971. Study of the population and sex ratio, age structure and food habitat of Houbara Bustard (*Chlamydotis undulata*) in Cholistan Desert Rahim Yar Khan. West Pakistan. WWF-P report.
2. ---- 1971. Population census of Punjab Urial (*Ovis orientalis punjabiensis*) at Jabba Wildlife Reserve Kalabagh in West Pakistan WWF-P.
3. ---- 1977. Population and types of snakes in Lal Sohnra National Park, Bahawalpur WWF-P report.
4. ---- 1977. Population of Wild Boar *Sus scrofa* and the extent of damages by this animal to Agriculture in Faisalabad District PARC report.
5. ---- 1978. Census of Wildlife in Neelam Valley WWF-P report.
6. ---- 1978. Reintroduction of Cheer pheasants in Margallah Hills WWF-P/WPA report.
7. ---- 1982. Population distribution habitat, food, social behaviour and breeding behaviour of Punjab Urial, Nilgai and Chikara Gazelle in Punjab. Final Technical Report PL–480 Project PARC.
8. ---- 1995. Houbara Bustard Surveys in Balochistan 1993–1995 WWF-P report.
9. ---- 1997. Guideline proposal: Assessment of Faunal Biodiversity, Conservation of threatened species and areas of biodiversity importance in Pakistan. WWF-P publication.
10. ---- 1997. Revised Biodiversity Action Plan. IUCN & WWF (with 5 other scientists).
11. ---- 1999. Assessment of Biodiversity and habitat in Malakandi forest, Kaghan Valley, Dist Mansehra. WWF-P report.
12. ---- 1999. Assessment of Biodiversity and habitat in Ayubia National Park, Dist Hazara, and with Annexed illustrated field guide to common plants and animals. WWF-P publication.
13. [1.]Z.B.Mirza, [2.]Mohammad Ayaz Khan, [3.]Mohammad Israr Khan, [4.]Qazi Sohail Shahid and [5.]Shahid Tabassam 2002. 'Ascending with Spring', Baseline study of birds in Malkandi forest, Kaghan valley, district Mansehra. WWF-P

ENVIRONMENT AWARENESS AND EDUCATION MATERIAL

Wall charts, posters, folders and brochures

1. Some butterflies of the Punjab Wall chart WWF-P 1975
2. Birds of Rawal Lake Wall chart WWF-P
3. Wildlife of Margalla Hills National park Wall chart WWF-P
4. Falconiformes(raptors) of Pakistan. Information Disk. WWFP

5. Galliformes (Pheasants, Partridges & Quails of Pakistan) of Pakistan. Information disk.World Pheasant Association

6. Some butterflies of Punjab. WWF Pakistan.

7. Animals of Lahore Zoo. Information disk. Lahore Zoo
8. Animals of Lal Suhanra National Park Folder with School time table Bata Shoe Company.
9. Some butterflies of Margallah Hills National Park Wall Chart Himalayan Wildlife Foundation (HWF).
10. 11. Birds of Margallah Hills National Park Wall Chart (HWF).
12. Birds of Margallah Hills National Park Information disk HWF
13. Butterflies of Margallah Hills National Park Wall Chart (HWF).
14. Snow Leopard Awareness Chart (SLF)
15. Mammals of Snow Leopard habitat disc (SLF)
16. Mammals of Margallah Hills National Park. (IWMB)

Signed: **Z. B. Mirza**